

Temporary interruption of treatment in three patients is not a high rate of pauses that may affect the outcome of cancer treatment (local control of the disease). It also shows the small negative effect of these treatments during application and good clinical acceptance in groups of elderly patients. Definitive interruption of treatment occurred in only 2 patients. They were not as a result of acute toxicity produced during radiotherapy, which reaffirms the option of external radiation therapy as a treatment in elderly based on toxicity criteria and/or fragility of the patient. Hypofractionation may be a valid treatment regimen in elderly patients with comorbidities.

#### EP-1106

**Orthovoltage X-ray therapy is superior to standard drugs for controlling pain in knee osteoarthritis**

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**Purpose/Objective:** To compare orthovoltage X-ray therapy (OXRT) and standard treatment for reducing pain in knee OA. **Materials and Methods:** Twentyone patients having Grade 1 of knee joints OA evaluated by Kellgren Lawrence Score, were prospectively randomized to OXRT (n=11) or standard treatment consisting of combined Chondroitin (CS) and Glucosamine Sulfates (GS) medicine 'Theraflex' and non-steroid anti-inflammatory drug Ketoprofen (n=10). Dose prescription for OXRT (XStrahl-200, Gulmay Medical Inc., USA) was 4,8 Gy in 10 fractions for 3.5 weeks. Theraflex was given 1 dose, containing CS 400 mg and GS 500 mg 3 times per day during 3 weeks in combination with Ketoprofen 100 mg 3 times a day. Supportive treatment consisting of Theraflex twice daily and Ketoprofen 100 mg up to 2 times a day begun from the fourth week during 3 months. The pain severity was evaluated by visual-analogue scale (VAS). The comparative analysis, considering the values in VAS being continuous, was performed using Mann-Whitney test. **Results:** Median age of patients in OXRT group was 53.2 (SD, 2.80) and Theraflex group 55.1 (SD, 3.2). The proportions of males were 45.5% and 40.0% for OXRT and Theraflex groups respectively. The distribution on initial characteristics was equal. Initially, the pain severity in OXRT group was 7.3 (95% CI, 6.6-7.9) and 7.5 (95% CI, 6.8-8.3) for the patients of Theraflex group. After 3 months of follow-up the pain level by VAS has been reduced by 4,3 (Q<sub>1</sub> 3.0 - Q<sub>3</sub> 5.6) and 2,4 (Q<sub>1</sub> 0.6 - Q<sub>3</sub> 3.3),  $\chi^2=0.006$ ,  $U=17.00$  among patients of OXRT and Theraflex groups, respectively. **Conclusions:** Orthovoltage X-ray therapy allows decreasing significantly pain after 3 month. The evolution of cartilage thickness and long-term safety should be measured further.

#### EP-1107

**Neoadjuvant chemoradiotherapy for the elderly patients with oesophageal carcinoma: a systematic review**

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**Purpose/Objective:** To assess the efficacy and safety of neoadjuvant chemoradiotherapy in elderly patients with resectable oesophageal carcinoma by a systematic review. **Materials and Methods:** Medline, Embase, ISI Web of Knowledge, Cochrane Library and China Biological Medicine Database were systematically searched in September 2012. Studies comparing the outcomes of neoadjuvant chemoradiotherapy or surgery only for elderly patients with oesophageal carcinoma were included without language restriction. The minimum threshold age used to define the elderly was 60 years. The primary outcomes were long-term survival, postoperative mortality and complication. All statistical analyses were undertaken in Review Manager 5.1 and random effect model was used. **Results:** Out of the initially 144 hits, four studies of 1221 patients (1 randomized controlled trial, 3 cohort studies) were included. Meta-analyses based on 3 studies suggested that neoadjuvant chemoradiotherapy was not associated with significant improvement in disease-free survival (HR=1.08, 95%CI: 0.91-1.28;  $p=0.38$ ) and overall survival (HR=1.12, 95%CI: 0.94-1.33;  $p=0.19$ ) than surgery alone in elderly patients. The 3 years survival rate was 40% vs. 34% in neoadjuvant group and surgery alone group, while 5 years survival rate was 18% vs. 20%, respectively. No significant survival difference was found ( $p>0.05$ ). And there was also no significantly difference in postoperative mortality and major complications (including respiratory diseases, cardiovascular diseases, renal failure, and anastomotic leak) based on 3 studies. Quality of life was reported in one study which showed no significant difference between two groups except for less hospital discharge in neoadjuvant group. **Conclusions:** Comparing with surgery alone, neoadjuvant chemoradiotherapy didn't show significantly survival benefit in the

elderly with oesophageal carcinoma. Though studies were few in number, the current available evidence prompted that the elderly may get less benefit from neoadjuvant chemoradiotherapy than younger. The effect of neoadjuvant chemoradiotherapy for the elderly esophageal cancer is still unproven, more clinical studies are needed for the definite results. If possible, additional subgroup analysis by different ages in randomized controlled trials may help.

### ELECTRONIC POSTER: CLINICAL TRACK: PALLIATION/ SUPPORTIVE CARE/PATIENT SUPPORT

#### EP-1108

**High dose radiotherapy using helical Tomotherapy for spinal metastasis**

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**Purpose/Objective:** For several decades, radiotherapy (RT) has been widely used to treat metastatic spinal tumors. This study was designed to assess the feasibility and early clinical outcome of high dose RT to treat such tumors, using helical tomotherapy (HT).

**Materials and Methods:** Between June 2009 and December 2011, 51 sites in 36 patients were treated with high dose RT using HT for spinal metastasis. Treatment outcomes and dosimetric analyses of spinal cord were retrospectively evaluated.

**Results:** Median follow-up was 11.5 months (range, 6-34.6) for surviving patients. The median fractional dose and the number of fractions in the primary HT arm were 2,700 cGy and 3 fractions, respectively. Actuarial 6-month local control rates was 85.7%, and symptomatic vertebral compression fractures developed in five patients after median 4.2 months. Among 13 patients with 19 metastatic sites who showed pre-treatment impairment in neurologic function, five patients (with seven sites) in whom symptoms were mild showed improvement in neuronal function. The median pre-treatment VAS score of 7 decreased to a median of 3 after HT ( $P < 0.001$ ) at median 1 month (range, 0.5-3.2). No significant morbidity developed during follow-up except for one grade 3 esophagitis.

**Conclusions:** The use of HT to treat metastatic spinal tumors appears to be both safe and reliable in terms of local tumor control and early pain relief. Local progression and the risk of compression fracture in patients with pre-existing spinal instability remain as the principal factors of limiting improved clinical and functional outcomes. Optimal dose fractionation schemes and appropriate patient selections are required to achieve better outcomes with high dose RT using HT.

#### EP-1109

**Palliative radiotherapy may improve quality of life in patients with chemoresistant malignant lymphoma**

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**Purpose/Objective:** Most malignant lymphomas are effectively treated by chemotherapy, but some of them relapse and become refractory. Treatment of relapsed chemoresistant or refractory lymphoma is difficult in many cases and salvage chemotherapy with or without autologous stem cell transplant is not always effective. Best supportive care is often chosen for such patients; however, palliative radiotherapy (RT) is thought to be very useful for some cases. The aim of this study was to analyze the treatment outcomes of patients who received palliative RT for relapsed or refractory malignant lymphoma.

**Materials and Methods:** From 2008-2012, 160 patients with malignant lymphoma were treated at the Department of Radiation Oncology in our institute. Among them, 20 patients (12.5%) were referred with palliative intent, consisting of 17 aggressive lymphomas (13 diffuse large B-cell lymphomas and 4 other lymphomas) and 3 indolent lymphomas. Six patients had a bulky tumor and 10 patients showed multiple masses. The treatment outcomes of palliative RT were retrospectively analyzed.

**Results:** The median age at the time of RT was 60 years old (range: 42-92), and 13 patients (65%) were male. Three patients died during treatment. The median follow-up from RT was 3 months (range: 0.75-19). Overall response rate was 94% (complete response: 36%, partial response: 58%). The median overall survival was 3 months (range: 0.75-19). In RT for 48 sites of 20 patients, median dose of treatment was 34 Gy (range: 4-50). Nineteen patients (95%) showed a significant response to RT (pain relief, prevention of neurological symptoms,